BRIEFING NOTE FOR THE DIRECTOR OF CENTRAL INTELLIGENCE

SUBJECT: OXCART Status Report

1. Since the first flight of an OXCART A-12 aircraft on 26 April 1962, 930 flights totalling 1289:36 hours have been made utilizing thirteen aircraft [redacted]. Of those totals, 541 flights accumulating 650:11 hours were powered by the twin J5B engine installation.

2. All 13 OXCART A-12 aircraft have been delivered to the [redacted]. With the loss of aircraft 133 on 9 July 1964 and 123 on 24 May 1963, 11 aircraft are presently at the test site. Aside from the temporary grounding pending incorporation of fixes resulting from the aircraft 133 accident review, four aircraft are assigned to flight test, six aircraft are assigned the the Detachment and are being flown by the operational pilots, while the latest aircraft 132 is assigned to functional check-out prior to assignment to the Detachment. Aircraft 132 is scheduled for Mach 2.8 mission capability training after delivery to the Detachment.

3. All 11 aircraft are currently grounded for incorporation of fixes resulting from the aircraft 133 accident. Details of the accident and the fixes which involve the flight control system servo valves governing elevon operation are included in Attachment I. The first two aircraft, 121 and 129, with all fixes incorporated are scheduled for flight during the week of 2 August 1964.

4. To date the longest sustained flight for the A-12 with two J-58 engines is 4:25 hours. The longest sustained flight for the trainer aircraft #124 with two J-75 engines is 5:25 hours. The maximum speed achieved has been Mach 3.27 and the maximum altitude has been 83,000 feet. On 29 April 1964, one aircraft sustained flight for 32 minutes between Mach 3.07 and 3.14 at 82,000 feet altitude. This represents the longest sustained flight closely approximating design conditions.

5. The three OXCART camera systems of Perkin Elmer and two camera systems of Eastman Kodak at the test site are performing satisfactorily in Detachment aircraft at speeds up to Mach 2.35, which is currently the restricted maximum speed permissible for Detachment aircraft. Over 85 flights have been performed. In the next few weeks Detachment aircraft will be available to fly at Mach numbers above Mach 2.8 and at such time the camera test envelope will be extended to encompass higher speeds and temperatures not yet encountered in the camera flight test program.

6. A Westinghouse device, known as KEMPSTER A, which will generate an electron cloud that can absorb radar frequencies, has been mounted in aircraft #131 and performance testing has been started. The preliminary findings of two flight tests indicate that the equipment performed as planned. Additional tests are necessary to ascertain the optimized potential of the equipment.

7. In regard to ancillary aircraft systems equipment problems, the inertial navigation system performance is steadily improving. A coupler retrofit, integrated rack and increased flow of cooling air to the system, now installed in all aircraft, should raise the reliability of this system to an acceptable level. The ARC-50 communications equipment (rendezvous for aerial refueling) is undergoing modification and should result eventually in an acceptable system. Tests of the latest modified ARC-50 systems will continue when aircraft resume flying the week of 2 August. The ARC-50 communications equipment is a pacing item in the development of a Detachment operational rendezvous aerial refueling capability.

8. Currently deficiencies still exist in aircraft transonic and cruise performance. Reflection of these deficiencies was expressed by Mr. C.L. Johnson during a suppliers meeting on 23 July 1964 as summarized in Attachment IV. Because of these deficiencies a special task force comprising senior performance engineering personnel of the contractors involved has been in session at Burbank since April 1964. Their activity includes conducting a thorough analysis of all available flight test data and making recommendations for further improvements in the overall propulsion system performance. Many of these recommendations are now being implemented or are scheduled for early

testing. Noteworthy items are additional transonic wind tunnel testing, flight tests to optimize the climb path, and additional wind tunnel ejector tests. In addition, various other potential performance improvement factors are being surfaced and examined by the group as indicated on Attachment IV.

Attachments

I - Summary - Aircraft #133 Accident Details
II - Aircraft Flight Test Summary
III - J-58 Engine Development Summary
IV - Aircraft Performance

# AIRCRAFT FLIGHT TEST SUMMARY

The following is a recapitulation of flight test activity since the first flight in April 1962.

Aircraft 121 - 133 flights (total time 128:02 hours). 36 flights were with J-75 engines; 18 flights were with one J-75 engine and one J-58 engine. First flight with two J-58 engines occurred on 9 March 1963.

Aircraft 122 - 66 flights (total time 62:11 hours) with two J-58 engines.

Aircraft 123 - Crashed on 24 May 1963 after 79 flights (total time 136:10 hours) with two J-75 engines.

Aircraft 124 - (dual-seat trainer) - 260 flights (total time 443:37 hours) with two J-75 engines.

Aircraft 125 - 83 flights (total time 111:37 hours) with two J-58 engines.

Aircraft 126 - 64 flights (total time 92:00 hours) with two J-58 engines.

Aircraft 127 - 67 flights (total time 88:47 hours) with two J-58 engines.

Aircraft 128 - 49 flights (total time 85:15 hours) with two J-58 engines.

Aircraft 129 - 51 flights (total time 51:11 hours) with two J-58 engines.

Aircraft 130 - 49 flights (total time 65:13 hours) with two J-58 engines.

Aircraft 131 - 11 flights (total time 10:01 hours) with two J-58 engines.

Aircraft 132 - 8 flights (total time 7:15 hours) with two J-58 engines.

Aircraft 133 - 10 flights (total time 8:17 hours) with two J-58 engines. (Crashed 9 July 1964)

The accumulated flight experience of 1289:36 hours and 930 flights includes the following approximate total time and number of flights above the listed Mach numbers.

| Mach Number | Flights (Above given Mach No.) | Time (Above given Mach No.) |
|---|---|---|
| 2.0 | 337 | 140 hours |
| 2.2 | 281 | 90 hours |
| 2.4 | 132 | 20 hours |
| 2.6 | 78 | 10 hours |
| 2.8 | 31 | 6 hours |
| 3.0 | 16 | 2 hours |
| 3.2 | 4 | 12 minutes |

(3) Keep by-pass doors closed and eliminate leakage.

(4) Dive through the transonic region.

(5) Increase the allowable turbine inlet temperature during the brief time to go from Mach .90 - 1.20.

(6) Increase the allowable climb speed to 425 KEAS above Mach 1.2.

(7) Investigate reducing the secondary airflow being rammed down the nacelle from the present 8.5% to the originally planned 4%. This could result in a drag reduction.

(8) Improved fuel: a) increase density, b) increase heating value.

Notified Red Herron & Ang.

BYE 3097-64

D/TECH: [redacted] (1 August 64)
Distribution:
1-DCI
2-DDCI
3-OGC (Mr. John Warner)
4-DD/S&T
5-DD/S&T
6-AD/OSA
7-D/TECH/OSA
8-PS/OSA
9-OXC/FA/OSA
10-RB/OSA